

REMARKS

Applicants thank the Examiner and the Examiner's supervisor for the courtesy extended to Applicants' attorney and Applicants' assignee's representative during the interview held December 21, 2006, in the above-identified application. During the interview, Applicants' attorney explained the presently-claimed invention and why it is patentable over the applied prior art, and discussed other issues raised in the Office Action. The discussion is summarized and expanded upon below.

The rejections under 35 U.S.C. § 103(a) of Claims 1, 2, 6 and 7 as unpatentable over U.S. 6,174,935 (Matsunae et al), and of Claims 3 and 4 as unpatentable over Matsunae et al in view of EP 0173567 (Ying), are respectfully traversed.

Matsunae et al's self-etching primer contains, *inter alia*, (B) from 1.0 to 98% by weight of a water-soluble organic solvent, wherein the only organic solvents exemplified are ethyl alcohol and acetone (col. 4, lines 21-22), although Matsunae et al also discloses that the (meth)acrylate not having an acidic group but having a hydroxyl group and having at least one unsaturated bond, which is compound (E) in their bonding agent (ii), can be contained in the self-etching primer (i), preferably in an amount of from 0.5 to 4.5% by weight (column 5, lines 59-67).

Thus, and as Applicants' attorney pointed out during the above-referenced interview, Matsunae et al does not disclose a dental adhesive kit wherein their self-etching primer (i) comprises a hydrophilic polymeric monomer in an amount of at least 10 wt.% therein. Indeed, as discussed above, Matsunae et al limits such a component to a maximum of 4.5% by weight.

The Examiner relies on the disclosure in Ying of acylphosphine oxide and 2,4,6-trimethylbenzoyldiphenyl phosphine oxide as a photopolymerization initiator. However,

even if the photopolymerization initiator of Ying were used as the photopolymerization initiator of Matsunae et al, the result would still not be the presently-claimed invention.

For all the above reasons, it is respectfully requested that these rejections be withdrawn.

The rejection of Claims 8-10 and 12-15 under 35 U.S.C. § 103(a) as unpatentable over JP 2002-003327 (Kawahara et al)¹ in view of EP 0980682 (Nakatsuka et al), is respectfully traversed.

Kawahara et al is described in the specification herein as disclosing a translucent tooth-coating composition for finishing teeth after bleaching including 10-80 wt.% polyfunctional acrylate monomer, 20-80 wt.% low boiling solvent, 0.4-5 wt.% polymerization initiator, and 0.5-10 wt.% white inorganic palpable powder, including an embodiment wherein a phosphoric ester adhesive monomer is included in an amount of 0.1-5 wt.% [0004]-[0005]. However, when the phosphoric ester adhesive monomer is added, adhesiveness to teeth is not largely improved but the surface curing property is largely degraded [0006]. The present invention was devised to overcome this problem [0007]. Note additionally, that the low boiling solvent of Kawahara et al may be methyl or ethyl (meth)acrylate [0025].

Nakatsuka et al discloses that a dental bonding method of using a self-etching adhesive primer comprising, for example, an acidic monomer, a hydrophilic monomer and water that is applied to the tooth, after which a bonding material is applied directly thereto without washing and drying the primer-coated tooth, is known, but problematic [0004]-[0005]. Nakatsuka et al's invention is drawn to an antibacterial primer comprising a specific antibacterial polymerizable monomer and a volatile solvent that is applied around the surface of a tooth and then dried spontaneously or through dental air blowing, after which an

¹ While the Examiner cites this reference as Haruyuki et al, Haruyuki is the first name of Haruyuki Kawahara.

adhesive composition comprising an acid group-having polymerizable monomer, a polymerizable monomer and a polymerization initiator is applied to the area of the tooth and cured along with the antibacterial monomer previously applied thereto to form an antibacterial polymer layer having a high concentration at the interface between the tooth and the bonding material [0017]. The adhesive composition is composed of two compositions, one being an adhesive primer that comprises an acid group-having polymerizable monomer, a hydrophilic polymerizable monomer and water, and the other being a bonding agent that comprises a polymerizable monomer and a polymerization initiator, wherein the photopolymerization initiator in the bonding agent contains, *inter alia*, an acylphosphine oxide, and wherein the adhesive primer is first applied to a tooth and is cured along with the bonding agent [0018].

The Examiner holds that it would have been obvious “to have used the primer and adhesive composition [of Nakatsuka et al] before treating the teeth with the compositions of [Kawahara et al] motivated by the desire to have better adhesion of the coating or composite material to the dentin or enamel as disclosed by [Nakatsuka et al].”

In reply, without the present disclosure as a guide, it is not clear why one skilled in the art would combine Kawahara et al and Nakatsuka et al. As Applicants’ attorney noted during the above-referenced interview, there is no evident reason suggested by Kawahara et al why an intermediate treatment between tooth bleaching and translucent tooth coating, other than perhaps etching processing with a phosphoric acid solution [0046], would even be considered. As pointed out above, Kawahara et al includes an embodiment wherein a phosphoric ester adhesive monomer is included in the translucent tooth-coating composition. In addition, Kawahara et al desires that their translucent tooth-coating composition penetrate tooth surface tissue [0047]. Applying the coatings of Nakatsuka et al first would appear to frustrate this goal.

For all the above reasons, it is respectfully requested that this rejection be withdrawn.

The rejection of Claims 8-10 and 12-15 under 35 U.S.C. § 103(a) as unpatentable over Kawahara et al in view of Matsunae et al, is respectfully traversed.

The disclosures of Kawahara et al and Matsunae et al have been discussed above. The Examiner holds that it would have been obvious “to have used the primer and adhesive composition [of Matsunae et al] before treating the teeth with the compositions of [Kawahara et al] motivated by the desire to have better adhesion of the coating or composite material to the dentin or enamel, use components that are simple to use and inhibit secondary caries, as disclosed by [Matsunae et al].”

In reply, without the present disclosure as a guide, it is not clear why one skilled in the art would combine Kawahara et al and Matsunae et al, but even if combined the result would not be the presently-claimed invention. As discussed above, the primer composition herein is neither disclosed nor suggested by Matsunae et al. In addition, and as discussed above, there is no evident reason suggested by Kawahara et al why an intermediate treatment, other than as discussed above, would be considered.

For all the above reasons, it is respectfully that this rejection be withdrawn.

The rejection of Claims 8-10 and 12-15 under 35 U.S.C. § 112, first paragraph, as failing to comply with the description requirement, is respectfully traversed. The Examiner finds that the phrase “different from said coating composition” is new matter, and that it cannot be determined what is meant by “different”, such as how the compositions are different.

In reply, the issue is now moot in view of the above-discussed amendment. As Applicants’ attorney noted during the interview, the term in dispute is at least inferentially supported throughout the specification, and confirmed by, for example, the exemplified embodiments in Table 3 at page 53 of the specification (at pages 15-16 of the PG Pub). In

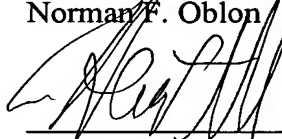
addition, since Claim 8 is drawn to a kit, it would be non-sensical for two of the three components of the kit to be identical.

For all the above reasons, it is respectfully requested that this rejection be withdrawn.

Applicants respectfully submit that all of the presently pending claims in this application are now in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Respectfully submitted,

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